

NAVAL WAR COLLEGE  
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THINKING THE UNTHINKABLE--FACING A NUCLEAR, BIOLOGICAL, CHEMICAL  
AND THE MEANS TO DELIVER (NBC&M) ADVERSARY: AN INTEGRATED  
PLANNING CONSIDERATION FOR THE OPERATIONAL COMMANDER

by

Bruce S. Wong

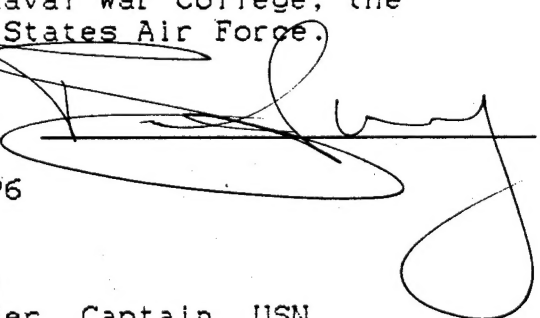
Lt Colonel, USAF

A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Joint Military Operations Department.

The Contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College, the Department of the Navy or the United States Air Force.

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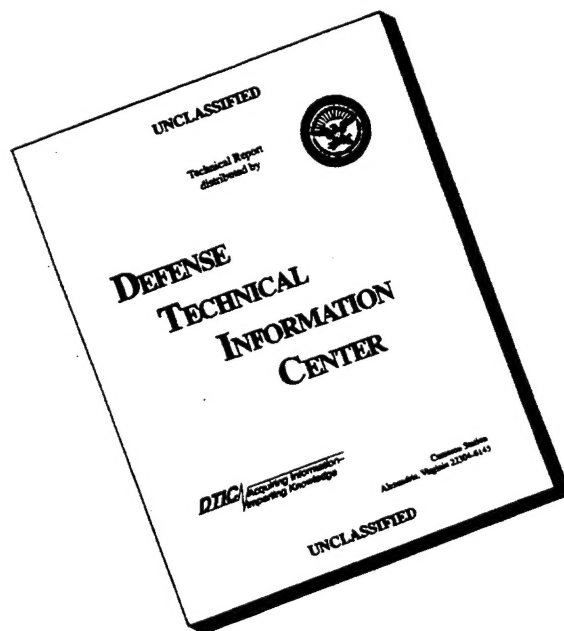
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REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule:			
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT			
6. Office Symbol: C		7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207	
8. Title (Include Security Classification): Thinking the Unthinkable--Facing a Nuclear, Biological, Chemical and the Means to Deliver (NBC&M) Adversary: An Integrated Planning Consideration for the Operational Commander (U)			
9. Personal Authors: Lt Col Bruce S. Wong, USAF			
10. Type of Report: FINAL		11. Date of Report: 20 May 1996	
12. Page Count: Total--35			
13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.			
14. Ten key words that relate to your paper: Integrating a nuclear response into conventional operations			
15. Abstract: In today's volatile political, economic, religious and cultural environment Nation-States aggressively pursue robust NBC&M capabilities as economic and force equalizers for asymmetric warfare advantage. Two thoughts follow. First, the odds indicate the United States will face a NBC&M capable and confident adversary in a future regional conflict. Second, although never publicly nor explicitly stated, the United States has indicated it may respond with nuclear weapons when confronted with NBC&M in a conventional war. However, accurate, this exchange invites a compelling question: are we prepared to confidently integrate such Presidential tasks into a conventional environment? This paper seeks to provide some considerations to this question. It is not about telling the Operational Commander how to execute Presidential task; it is about pulling together diverse operational considerations as a reasonable foundation for integrating nuclear response into conventional operations.			
16. Distribution / Availability of Abstract:		DTIC Users	
17. Abstract Security Classification: UNCLASSIFIED			
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT			
19. Telephone: 841-6461		20. Office Symbol: C	

Abstract of  
THINKING THE UNTHINKABLE--FACING A NUCLEAR, BIOLOGICAL, CHEMICAL  
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## INTRODUCTION

"War between China and Taiwan is unthinkable today. It makes no sense, it is as unthinkable as an Iraqi invasion of Kuwait was in July 1990, as unthinkable as China entering the Korean War against the United States was in November 1950, as unthinkable as Britain having to expel the Argentines from the Falklands seemed in 1982."<sup>1</sup>

"I, William J. Clinton, President of the United States of America, find that the proliferation of nuclear, biological, and chemical weapons and of the means of delivering such weapons, constitutes an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States, and hereby declare a national emergency to deal with that threat."<sup>2</sup>

"Anyone who considers using a weapon of mass destruction against the U.S. or its allies must first consider the consequences...our response would be...both overwhelming and devastating."  
SECDEF Perry's April 1996 statement referring to N. Korea

There were many "lessons learned" during the Gulf War and from the perspective of a potential U.S. adversary, none was more important than the utmost requirement to avoid a head-to-head, force-on-force, Clauswitzian confrontation with the United States. No nation today or in the future can successfully take on the U.S. air, sea and land forces in a conventional battle and expect to survive. However, this doesn't mean the U.S. is invincible. Released from the Cold War's checks and balances a new threat and strategy is evolving from the global spread of NBC&M. Unlike the Cold War, combat morbidity and operational disruption have replaced strategic targets as tactical outcomes have become uncertain. For rogue nations the combination of unfolding events and evolving strategy are tickets to power, stature, and confidence in regional war effectively making operational levels of war all the more difficult.<sup>3</sup> Two thoughts follow. First, as approximately 100 nations have the

technological capability to develop a NBC&M program and more than 20 nations are actively pursuing offensive programs<sup>4</sup> the odds indicate the United States will face a NBC&M capable and confident adversary in a future conflict. Second, although never publicly nor explicitly stated, the United States has indicated it may respond with nuclear weapons when confronted with NBC&M in a conventional war.<sup>5</sup> However accurate, this exchange invites a compelling question: are we prepared to confidently integrate such Presidential tasks into a conventional environment? Although reasonable doctrine and operational plans address this critical planning issue experience during the Gulf War and Department of Defense (DOD) studies suggest that U.S. forces may not be prepared to confidently address this operational consideration.<sup>6</sup> Subsequently, we appear to dismiss this planning consideration as an unrealistic "non-player" relegated to simulation during operational exercises (not thinking the unthinkable). How does the CINC confidently address this aspect of operational planning? This paper seeks to provide some considerations to this question. It is not about telling the CINC how to plan for or execute Presidential tasks or operational plans; it is about pulling together diverse, unclassified, operational considerations as a reasonable foundation for integrating a nuclear response into conventional operations.

#### THE NEW ORDER OF CRISIS--IS THERE REALLY A THREAT TO PLAN TO?

"It doesn't make sense, it seems desperate. It doesn't conform to any military doctrine."

President George Bush on Saddam Hussein's environmental terrorism

The question is not simply an idle question. As the attack on Matsumoto, Japan and Iraq's use of NBC&M against Iran graphically demonstrated the NBC&M threat is omni-directional, can happen anywhere, at any time and will happen again.<sup>7</sup> Two considerations seem appropriate and broadly summarize the planning risks for the CINC: operational utility and capability.

NBC&M dual-use utility complicates the CINC's planning process as much of the technology, components, or facilitates needed for production may have peaceful purposes.<sup>8</sup> Biogenetic engineering, micro-encapsulation and bioproduction also reduce the NBC&M cost to the user. As suggested by Richard Danzig, ex-Under Secretary of the Navy, the cost of producing mass casualties per square kilometer are as follows: \$2000/km<sup>2</sup>-conventional, \$800/km<sup>2</sup>-nuclear, \$600/km<sup>2</sup>-chemical, and \$1km<sup>2</sup>-biological<sup>9</sup> (Attach 10).

Second, NBC&M is now a regional growth industry. North Korea has significantly advanced its nuclear, chemical and missile programs while simultaneously modernizing its missile delivery systems<sup>10</sup> (Attach 1 & 2). Iran, Iraq and Libya continue to threaten the stability of the Middle East, Southern Europe, North Africa and United States interests as these states incorporate NBC&M into their militaries<sup>11</sup> (Attach 3,4,5,6). Russia has inherited the largest stockpile of NBC&M weapons in the world representing a very attractive target for rogue states, terrorists and criminals.<sup>12</sup> India's and Pakistan's NBC&M current and future capability also threaten this region's stability with potentially grave consequences resulting from another



Indo-Pakistani war<sup>13</sup> (Attach 7&8). Transnational groups (terrorists, insurgents, opposing factions in civil war and organized crime) are attempting to acquire NBC&M capability in order to gain leverage for their demands.<sup>14</sup> Finally, the numerous ongoing civil wars, insurgencies and separatist movements dramatically raise the NBC&M risk to the host country and the United States should these weapons be introduced into a conflict (Attach 9).

Combined, the CINC will likely face a NBC&M opponent whose capability will be difficult to determine, is confident and will use what is in his arsenal as a cost-effective means to level the battlefield and neutralize Americas' superior conventional forces. Result: generalship at the operational level now requires one to function in a far more abstract environment with infinitely more variables.

#### BREAKING THE PARADIGM--THE FIRST STEP

"Any estimate on the current situation is obsolete in one year"<sup>35</sup>

"War is not a contest of weapons, but also a contest of will power." Generaloberst Lothar Rendulic

Based on the Gulf War and the Bottom-Up Review the Department of Defense (DOD) has issued the Defense Counter Proliferation Initiative (DCI) that directed the Joint Chiefs of Staff (JCS), CINCs, the military departments and the services to give "greater emphasis to counter proliferation requirements and considerations."<sup>15</sup> The objectives of the DCI are to prevent the acquisition of NBC&M, roll back proliferation, deter the use of NBC&M and "adapt U.S. military forces and planning to respond to regional contingencies in which U.S., allied, and coalition

forces face NBC threats."<sup>16</sup> The order of these objectives is deliberate, in line with the national security strategy of engagement and enlargement, but relegates response planning to last place.<sup>17</sup>

If we accept the premise we will face an NBC&M confident and capable adversary in a conventional conflict it may be useful to compare and contrast how these weapons are viewed by both sides. In our viewpoint, NBC&M is a superpower term. As they see it, it's a part of war to teach, study, train to, is an integral part of their doctrine and may have no political meaning nor operational agenda. In our viewpoint, we define the box and tools for conventional warfare. As they see it, anything is justified. In our viewpoint, their use of NBC&M is not acceptable to us nor the global community. As they see it, NBC&M is an equalizer and considered a conventional, tactical weapon.<sup>18</sup> Although a simplistic version of a myriad of analysis these considerations are instrumental in understanding that we see the world differently; a key consideration for operational planning.

#### THE PRECURSOR--PLANNING

"The unrelenting progress of mankind causes continual change in the weapons; and with that must come a continual change in the manner of fighting" Mahan, 1890

"Joint Forces Commanders (JFCs) must plan for the employment of nuclear weapons by US forces...Nuclear operations planning should be integrated into operational plans to maximize effects to achieve the CINC's desired objectives." Joint Pub 3-12.1

What Mahan so brilliantly understood in 1890 is still true today as "CINCs prepare for war by planning and organizing for conflict during peacetime."<sup>19</sup> Unfortunately, we still assume a Cold War planning approach to a omni-directional threat by

polarizing nuclear and conventional plans and considerations (not thinking the unthinkable). Two reasons may account for this segregated planning progress. First, notwithstanding Joint Staff guidance to CINCs on the need to plan and train for NBC&M operations, the CINC's generally consider NBC&M preparedness and training the responsibility of the individual military service. Second, most of the CINCs assign a lower priority to NBC&M than other considerations that they feel more directly relate to their mission.<sup>20</sup> The result is self-fulfilling; the CINC's operational plan may not confidently address the evolving threat or response.

If the CINC considers his next adversary will be NBC&M confident and capable his overall operational art may need to be broadly reexamined. The principles of mass, maneuver and concentration may have to be replaced by displacement and dispersion of the battlefield. Operational logistics plans may have to be reconsidered as the CINC may now have to prepare for a different avenue for entering the conflict and sustaining ports, airfields and operations. Operational tempo and synchronization may have to be reexamined as it is estimated a force could expect to suffer a fifty percent military and civilian personnel loss due to NBC&M fear and morbidity.<sup>21</sup>

The CINC most likely will face additional complex campaign planning issues regarding both regional and operating environments. For example, political considerations will force the decision to use nuclear weapons regardless of the military situation the CINC may face. The CINC must expect that civilian-military relations will be far different than he had

grown accustomed to with "outsiders" more directly involved in this specific planning process. As such, military assessments, simulations and calculations will not solely determine campaign decisions.<sup>22</sup> Moreover, the CINC must expect a torrential downpour of political participation regarding operational objectives, constraints / restraints, rules of engagement, collateral damage, and other issues normally delegated solely to the CINC. Something as simple as target nomination will now involve a new planning process to include the NCA. Current aircrew and naval nuclear weapon certifications may now find itself at the front of the planning list instead of a last minute add on. It may be likely that the CINC's operational considerations will not dominate the process. Finally, the CINC must be prepared for a delay in the decision making process as this process will now require NCA approval and release authority and will be complicated by an tremendous increase in very high level requests for continuous situation updates, progress reports and associated information.

Coalition and alliance cohesion should also be considered when the CINC fully integrates nuclear options into conventional operations plans. As each operational scenario will undoubtedly impact a coalition member in a unique way, the CINC must be prepared to construct campaign plans and execute tasks with less overt and greater conditional alliance commitment. Further, the CINC may now have to consider fewer coalition basing rights, port access, overflight authorizations, logistical and financial support for campaign plans due to Alliance reaction and concerns

regarding nuclear weapons. Finally, the CINC should consider that he may have to act unilaterally when coalition partners view a United States nuclear response as a greater danger than surrendering to the regional aggressor.<sup>23</sup>

Public opinion and media reaction will be overwhelming and subject both the CINC and his forces to intense scrutiny. The regional aggressor will most likely attempt to use this forum to pursue an information warfare strategy that creates the impression that such options far exceed the rules of the game and that the risks far outweigh any subsequent gains.<sup>24</sup>

A greater amount of uncertainty as to "what next and by whom" arises as it is not clear how the declared and subsequent NBC&M states will react if nuclear weapons are employed within their region. The CINC must now evaluate and incorporate greater assumptions regarding inter-theater threat and response, weapons effects and alliance stability as states that have historical religious or ethnic ties may change partnerships and ally themselves with the regional adversary.

Finally, termination difficulties and mitigating nuclear effects will complicate the CINC's post-war strategy. Joint doctrine broadly addresses this key termination issue and states: "Depending on the scope and intensity of a nuclear war, how and under what conditions it is brought to conclusion may be very different from previous wars."<sup>25</sup> With no historical precedent or check lists to return the adversary to the status quo ante the CINC will be exploring new ground in realistically planning post-war strategy. Mitigating nuclear effects will be difficult

as evidenced by Russia's effort in Chernobyl. Mass casualties, environmental and ecological destruction and evolving terminal effects will be but a few of the concerns the CINC may have to address in planning post-war strategy.<sup>26</sup>

Bottom line, in order to plan to succeed and not to fail the CINC may have to consider not only what force we apply in the future, but how we apply and sustain that force in a direct departure from the traditional American way of war.

#### GUIDANCE AND JOINT DOCTRINE--THE ESSENTIALS

Given that doctrine defines how we fight, the DOD Directives, Joint Pubs. Multi-Service and Service unique manuals have buried the warrior, the staff and the CINC with a plethora of information defining, examining, suggesting and directing operational planning considerations. By sheer volume, weight and multi-directional vector one might expect our doctrinal manuals to aide planners and operators in integrating "all" planning considerations. Unfortunately, one finds little mention of this perspective. This is somewhat understandable given the complexity of the task, but poorly serves the CINC. As a consideration, I believe the following four Joint publications and single supplement will provide the CINC the essential foundation for nuclear response planning.

Joint Publication 3-11, Joint Doctrine for Nuclear, Biological, and Chemical (NBC) Defense, summarizes both the threat and the NBC&M Defense Policy. The publication describes the fundamentals for NBC defense operations, suggests some theater NBC&M defense considerations, covers logistic and medical

support operations and recommends various NBC training and readiness policies. Combined, this publication provides the CINC essential operational planning considerations for frustrating the enemy's NBC&M objective--to delay and disrupt.

Joint Publication 3-12, Doctrine for Joint Nuclear Operations, suggests broad guidelines for the joint employment of forces in nuclear operations. As a primer for nuclear operations, it provides the CINC the fundamental considerations for force planning, targeting and discusses operations in a NBC&M environment. The publication further defines strategic and nonstrategic weapon categories and highlights treaty obligations. It well serves the CINC as a cornerstone for building an integrated foundation for operational planning.

Joint Publication 3-12.1, Doctrine for Joint Theater Nuclear Operations, suggests guidance for nonstrategic nuclear force employment and considers the role of United States theater nuclear operations. The publication discusses command and control, targeting and nuclear weapon employment. It further defines Command responsibilities and suggests several staff planning procedures. Finally, Joint Pub 3-12.1 outlines how support coordination is accomplished. Combined, this pub provides the CINC and his staff a sound framework for integrating nuclear options into conventional operational plans.

Joint Publication 3-12.2, Nuclear Weapons Employment Effects Data, reviews nuclear weapons effects with CJCSI 3110.00 (under development), "Nuclear Supplement to the Joint Strategic Capabilities Plan (JSCP FY 96)" complementing the JSCP.

In short, doctrinal manuals and directives are numerous and laud the notion of joint force planning but provide few suggestions on how to integrate nuclear and conventional operations. These four Joint Publications and one supplement do not replace the total information available but do form a solid foundation for integrating nuclear and conventional operational planning.

#### TACTICAL TOOLS (THE MEANS) TO AN OPERATIONAL END

As doctrine expresses the concept, the CINC also enjoys a myriad of weapons in the United States nuclear arsenal defined by two broad categories: nonstrategic and strategic forces. The nonstrategic weapons include gravity bombs carried on dual-capable aircraft (DCA) and long-range bombers, Tomahawk Land Attack Missile/Nuclear (TLAM/N) launched from submarines and cruise missiles delivered by long-range bombers. Strategic weapons include submarine-launched ballistic missiles (SLBM); and intercontinental ballistic missiles (ICBM).<sup>27</sup> Used singularly or in concert these systems, when authorized through the National Command Authority (NCA), provide the CINC a wide range of tactical considerations that can be tailored to support Presidential direction and operational end-states. Each system is unique and possesses distinct advantages and disadvantages for the CINC.

For example, gravity bombs delivered by DCA and long-range bombers give the CINC range, weapon flexibility and can be recalled if required. The weapons can be employed against mobile targets, vary in weapon yield and can be launched from the



continental United States. The launch platform is highly mobile, survivable and difficult to target. The disadvantages are underscored by aircrew risk, some lead time if employed from the continental United States and the possibility the weapon system may have to be released from other operational plan taskings.

The TLAM/N offers the CINC an opportunity to accurately strike at a heavily defended area with no risk to an on board crew. The launch platform is mobile, presents minimal basing issues, maximizes stealth and surprise and is recallable. However, the weapon is not recallable after launch, some lead time is required to transit to the desired launch point and is vulnerable to air defense systems. Additionally, terrain factors may limit launch flexibility, updated mission data is required prior to launch in order to update the mission profile and the weapon yield may exceed the CINC's operational objective.

Cruise missiles launched from long-range bombers afford the CINC a weapon that can successfully penetrate heavily defended areas with minimal risk to on-board crews. The launch platform is mobile, gives the CINC significant range, is flexible and survivable and can be recalled. The weapon maximizes stealth and surprise, has significant range and incorporates terrain factors that could limit other options. The weapon is not recallable in flight, may be vulnerable to modern air defense systems and the weapon yield may exceed the CINC's operational objective. Further, the system may have to be released from the Single Integrated Operational Plan (SIOP) for employment.

SLBMs provide the CINC a weapon that can strike heavily defended areas without risk to an on board crew. The launch platform maximizes stealth and surprise and is survivable. The weapon has multiple warheads and can be targeted in minimal time. However, multiple warheads may frustrate planning considerations, the weapon is not recallable after launch and the weapon yield may exceed the CINC's operational objective. Also, the system must be released from the SIOP and may demand international considerations prior to launch.

ICBMs also offer the CINC a weapon that can strike heavily defended areas without risk to an on board crew. It can be planned and targeted quickly, is survivable, has multiple warheads and enjoys the greatest amount of distance from the battlefield. However, the system requires release from the SIOP, is not recallable and its yield may exceed the CINC's objective. Additionally, multiple warheads may frustrate planning considerations, boosters may fall on United States or other territory and its use may demand international considerations prior to launch.<sup>28</sup> Combined, these tools offer the CINC an integrated array of operational considerations. However, if they stand "outside the box" they can not be confidently employed in combat.

#### **TRAIN THE WAY YOU FIGHT--FIGHT THE WAY YOU TRAIN**

"Consistency builds confidence" Gen Jack Chain, CINCSAC, 1988

Although we are slowly moving toward integrated campaign planning we still have not realistically broken the barrier separating nuclear and conventional exercise considerations.

Instead, we continue to think "inside the box" and exercise the CINC's operational plans by pursuing three courses of action (COA): we ignore the nuclear strike option, we ignore the NBC&M threat and reduce our NBC&M exercise environment to a defined time period or we divorce the nuclear strike option from the exercise.<sup>29</sup> The CJCS directed exercise numbers speak for themselves. In 1995 and 1996 CENTCOM, EUCOM, PACOM and USACOM participated in 324 joint exercises. Out of these, only 41 included any type of NBC&M integration or response.<sup>30</sup> Additionally, of the five major 1995 CENTCOM exercises (BRIGHT STAR, ULTIMATE RESOLVE, ROVING SANDS, BLUE FLAG and INTERNAL LOOK) none realistically integrated nuclear and conventional planning or operations.<sup>31</sup> In war games conducted both in Washington D.C. and at the military war colleges it is not uncommon for the "Red Force" (enemy) to attempt to disrupt the strategic deployment of the "Blue Forces." However, this is almost always disallowed so "that we can get forces in-theater and begin the battle."<sup>32</sup>

Such Cold War rules should be reconsidered as these do not build confidence, are not consistent with CJCS intentions nor integrate training. Perhaps it now makes sense to fully integrate theater and USSTRATCOM's planning staffs and nuclear and conventional delivery systems into all conventional exercises. Perhaps it now makes sense to exercise a nuclear response and not simulate the pre- and post- exercise environment. Perhaps it now makes sense to fully integrate nuclear and conventional assets and operationally direct the

exercise from the same sheet of music. It is tough, expensive, frustrating, but builds confidence.

### CONCLUSION

"President Saddam Hussein of Iraq gave us the early glimmers of the potential for special weapons to alter the character of war," said Ashton B. Carter, the Assistant Secretary of Defense for International security policy. "Therefore, we needed to be prepared to alter the character of our response."<sup>33</sup>

This paper began by accepting the proposition that the U.S. would face a NBC&M confident and capable adversary and may respond to a NBC&M attack with nuclear weapons. It asked two questions: "Are we prepared to confidently integrate such Presidential tasks into a conventional environment?" and "How does the CINC confidently address this aspect of operational planning?" Doctrinal manuals, "stovepipe" planning processes and sterile exercises offer little help in answering these questions.

The operational implications of campaign planning are not new to our commanders. Nuclear campaign planning is also not new to the United States military. We have successfully confronted our Cold War adversary and applied the operational planning precepts that resulted in a victorious confrontation of wills, not arms. Combined, the process, concepts, tools and opportunities are available to integrate nuclear and conventional plans. However, as a senior Pentagon official indicated on condition of anonymity, the military is not doing nearly enough to deal with the potential threat of NBC&M weapons. "People inside and outside the Pentagon look away and say it's too hard, too horrible to deal with. We are not doing enough."<sup>34</sup> We can't stand that answer.

#### End Notes

1. Jim Hoagland, 11 Feb 1996 Washington Post article criticizing U.S. actions regarding China and Taiwan. The author maintains that the U.S. continues to look the other way on issues that are "outside the box" and fails to plan or integrate the appropriate response to such unthinkable actions.
2. November 14, 1994 Executive Order on Mass Destruction Weapons proliferation. This was a Presidential response to Iraq's and North Korea's continued quest and proliferation of NBC&M. It appears to also be directed at China as the text did include references to that region. At no time did this include any reference to any U.S. military response to such actions.
3. Office of the Secretary of Defense on "Proliferation: Threat and Response," April 1996, pg III. SECDEF Perry seems to be setting the stage for a realistic review and looks at both the two MRC strategy and military response to NBC&M, overall. Although the broad response items include denial, protection, treaty and defense, he indicates the U.S. will respond in some form to anticipate or as a reaction to an NBC&M attack.
4. Ridgway Viewpoints report, "Biological Warfare: A Post Cold War Threat to America's Strategic Mobility Forces," pg 4. The author's point is that Third World and Rogue states will use NBC&M as a tool that is affordable and best promotes their interests regardless of what the rest of the global community thinks. Moreover, this proliferation constitutes a direct threat to all operational plans.
5. The author has drawn this conclusion from varied sources to include CNN reports of President Bush's letter to Hussein, Secretary of Defense Perry's comments within the April 1996 Proliferation: Threat and Response report and comments directed toward Korea, the Matthew B. Ridgway Center for International Security Studies discussion of biological warfare, the GAO's draft report on Chemical and Biological Defense, General Friel's comments during an April 1996 lecture at the Naval War College and personal knowledge. This in no way assumes U.S. response with nuclear weapons in any given scenario.
6. Ridgway Viewpoints report, "Biological Warfare: A Post Cold War Threat to America's Strategic Mobility Forces," pg 5. The report indicates the U.S. continues to ignore this issue as all exercises seem to not realistically

address this issue. Further, the report considers defensive and protective equipment issues facing the military.

7. John Ricca, Senior Scientist Supporting the Nuclear Weapons Counsel during a 9 May 1996 lecture at the Naval War College. Lectured on terrorism and NBC&M. The lecturer indicated that terrorist attacks using NBC&M are on the rise, that the information and capability is readily available and that the U.S. is not as proactive on dealing with this issue as he believes we should be. Mr. Ricca also indicates that the real disruptive threat is chemical and biological as a nuclear weapon that is applied in conditions that will not result in a lot of "stuff" being thrown into the air will not produce the continued morbidity or casualty effects as the former.

8. Col David Franz, Commander, U.S. Army Medical Research Institute of Infectious Diseases April 1996 lecture on NBC&M at the Naval War College. The lecturer strongly indicated that dual-use NBC&M utility severely complicates any response for planning purposes and a majority of components can have a peaceful purpose that disguises military intent. Further, it is not illegal to possess nuclear weapons. Firmly stresses NBC&M will be faced in the next conflict.

9. The Honorable Richard Danzig, Under Secretary of the Navy, "Biological Warfare: A Nation at Risk-A Time to Act," Strategic Forum, pg 1.

10. Office of the Secretary of Defense report "Proliferation: Threat and Response," April 1996, pg 1.

11. Ibid. pg 1.

12. Ibid. pg 29.

13. Ibid. pg 29.

14. Ibid. pg 43.

15. Ibid. pg 47.

16. Ibid. pg 47.

17. U.S. President, A National Security Strategy of Engagement and Enlargement, February 1995, pg 7.

18. Major General George Friel, USA, Lecture on Unconventional Warfare at the Naval War College, 28 March 1996. The lecturer is convinced that we are not facing the threat, have not integrated actions nor response planning and continue to look "in the box" in order to find the solution. He is convinced the U. S. will fight in a NBC&M environment in the near future. The General is promoting a type of linked sensor indicator that will give U.S. forces an

early warning for chemical and biological attack. Indicates that strategic and operational mobility and logistics will be paralyzed by an NBC&M attack with the CINC suffering up to a 50 percent force reduction due to fear and morbidity. Further, it is interesting to note that we appear not to include the civilian work force into our warfighting equation (ports, airfields, rail heads) in developing scenarios dealing with NBC&M calculations. A critical mistake?

19. Joint Pub 3-12.1, pg III-1.

20. GAO draft Report, "Chemical and Biological Defense," pg 10.

21. Major General George Friel, USA, Lecture on Unconventional Warfare at the Naval War College, 28 March 1996.

22. Jerome Kahan, Nuclear Threats from Small States, pg 12.

23. Kehler, pg 4.

24. Ibid. pg 5.

25. Joint Pub 3-12, pg I-6.

26. Kehler, pg 13.

27. Joint Pub 3-12.1, pg I-3.

28. Ibid. pg 1-3 - 1-5.

29. These opinions were defined by discussions with USSTRATCOM and USACOM J-3 / J-5 personnel, Minot and Barksdale AFB personnel and personal knowledge. They do not represent the views of the CINCs nor official positions of the commands. Exercise and planning integration is being accomplished as these commands examine theater options regarding nuclear weapons. However, other than very few Command Post and Battle Staff exercises, it appears we continue to divorce nuclear response and planning from the conventional war game or exercise. As briefed by aircrews from both Minot and Barksdale, their roles in conventional exercises supporting a nuclear option are not integrated into the exercise. Contacted Intercontinental Ballistic Missile (ICBM) crews could not acknowledge one theater / conventional exercise they had participated in. Further, a majority of nuclear options are simulated during the major joint exercises. Combined, the prevailing opinion within this group is that we don't take this seriously and do not integrate "men, machines and capability."

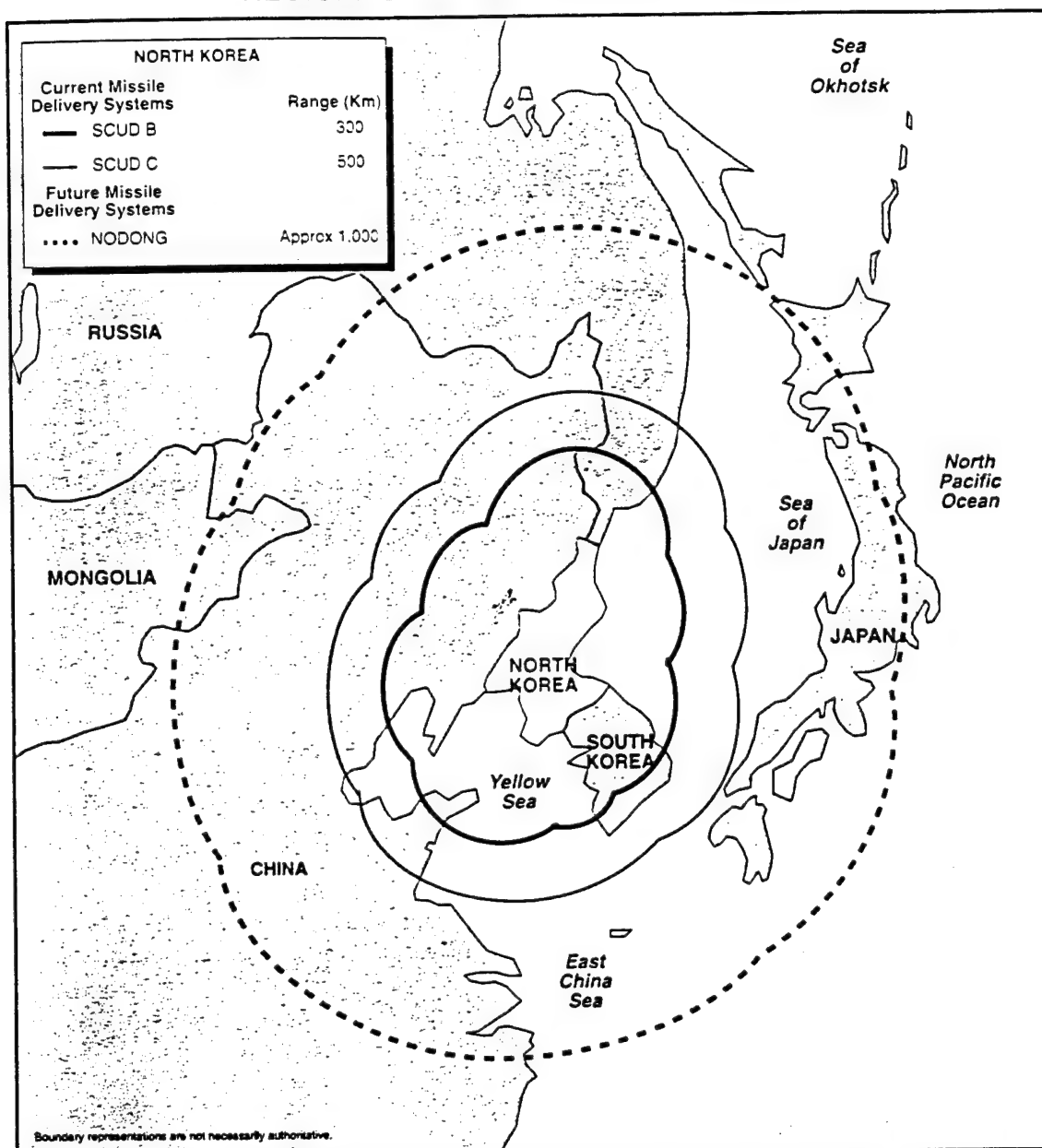
30. GAO draft report, pg 27. I must emphasize that this is a draft report and not the finalized official GAO position. Although the report does draw multiple conclusions, it does not officially reflect the position of the GAO as of 10 May 1996.

31. U.S. CENTCOM 2 May 1996 briefing at the Naval War College. All referenced to this staff briefing are unclassified.
32. Ridgway report, pg 14.
33. New York Times, 12 April 1996, pg A5.
34. Ibid. pg A5.



Section I  
NORTHEAST ASIA

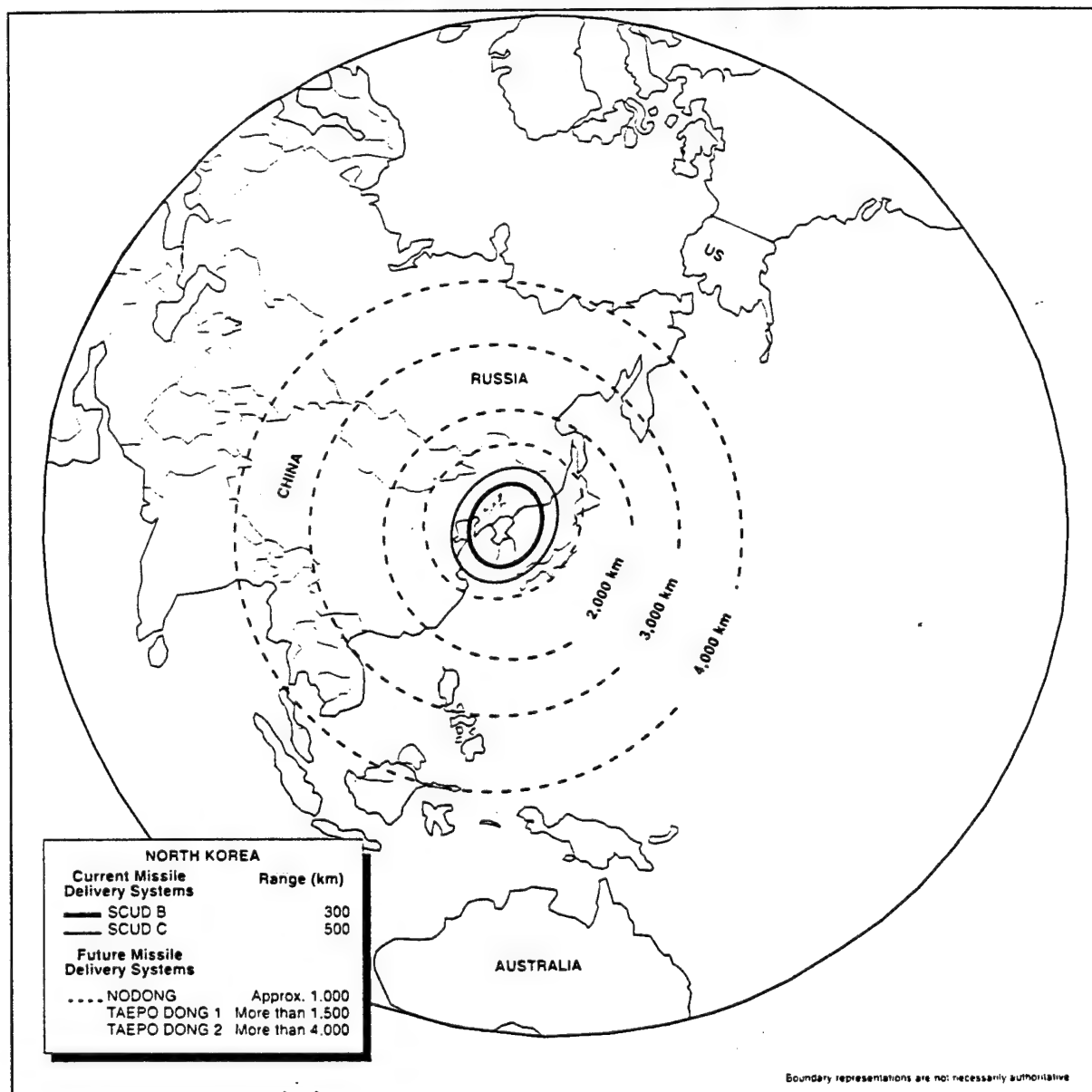
# REGIONAL BALLISTIC MISSILE THREAT



North Korea's current inventory of ballistic missiles allows it to strike targets throughout the peninsula. When the longer range missile — the NODONG — becomes operational, nearly all of Japan will be in range.

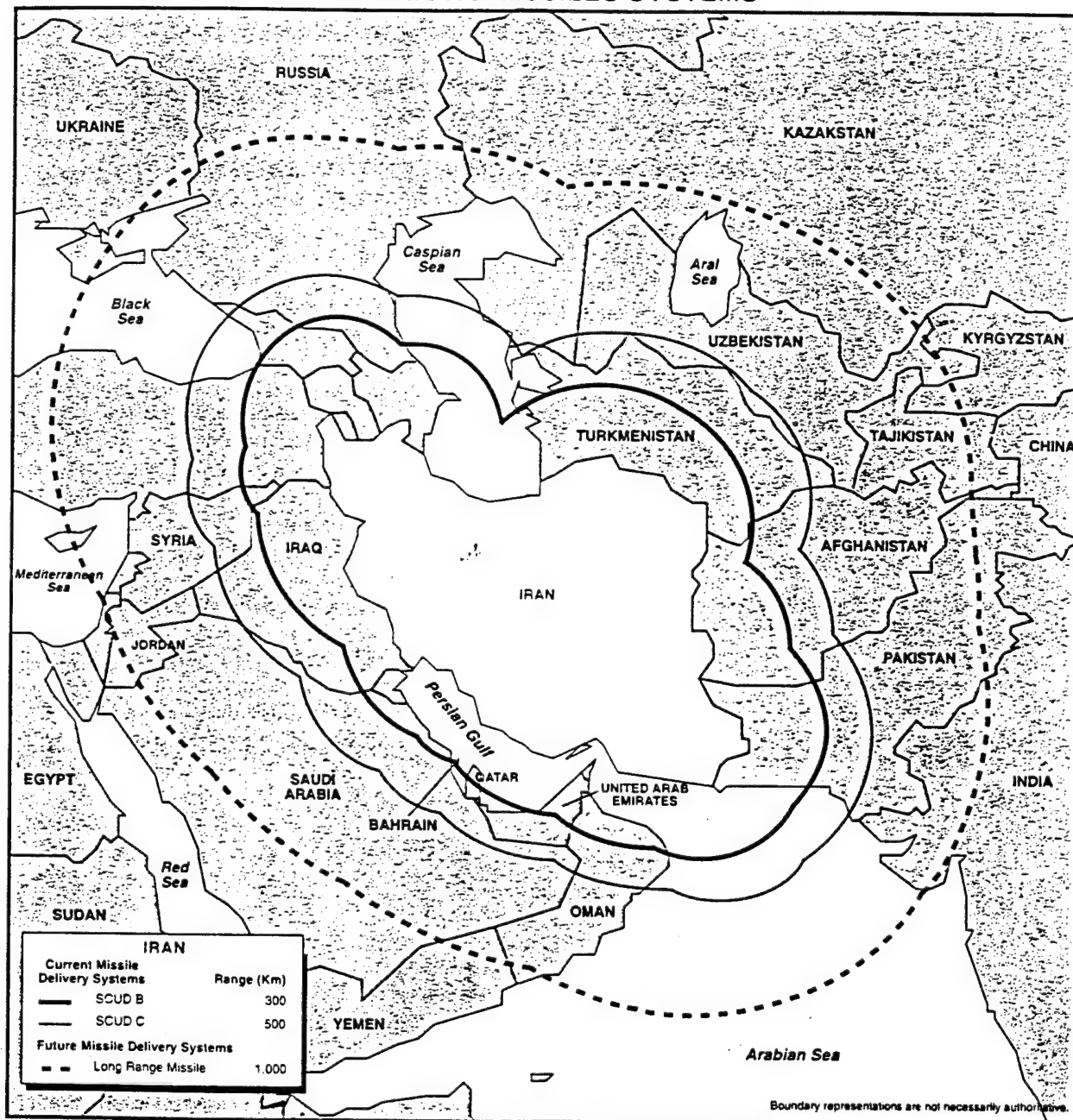
Section I  
NORTHEAST ASIA

RANGES OF CURRENT AND FUTURE  
BALLISTIC MISSILE SYSTEMS



Section I  
THE MIDDLE EAST AND NORTH AFRICA

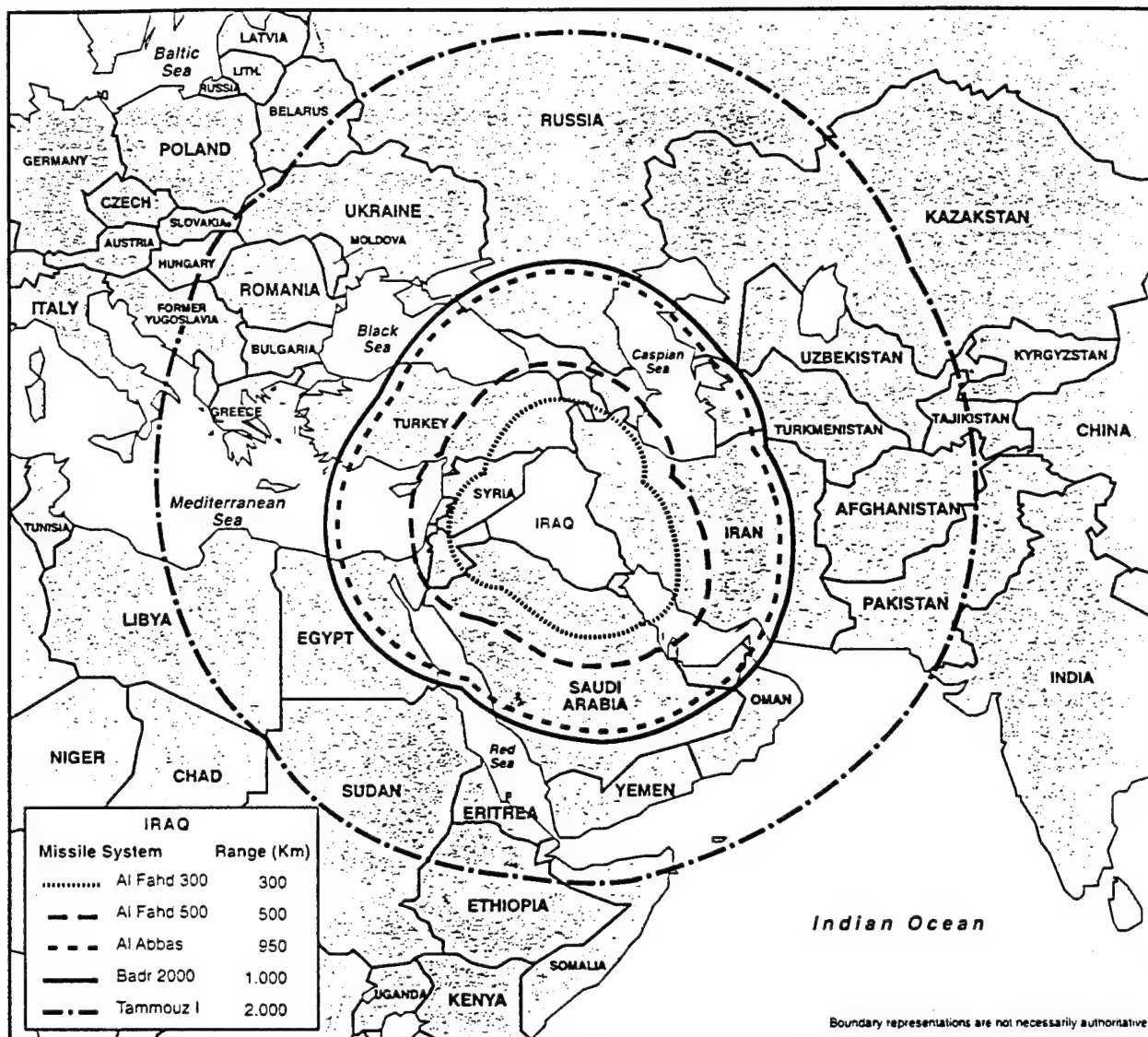
RANGES OF CURRENT AND FUTURE  
BALLISTIC MISSILES SYSTEMS



North Korea is key to Iran's future missile program. Should Iran receive a longer range missile, such as the NODONG, it will be able to threaten a much wider area.

Section I  
THE MIDDLE EAST AND NORTH AFRICA

MISSILES IN DESIGN OR RESEARCH AND  
DEVELOPMENT BEFORE OPERATION DESERT STORM

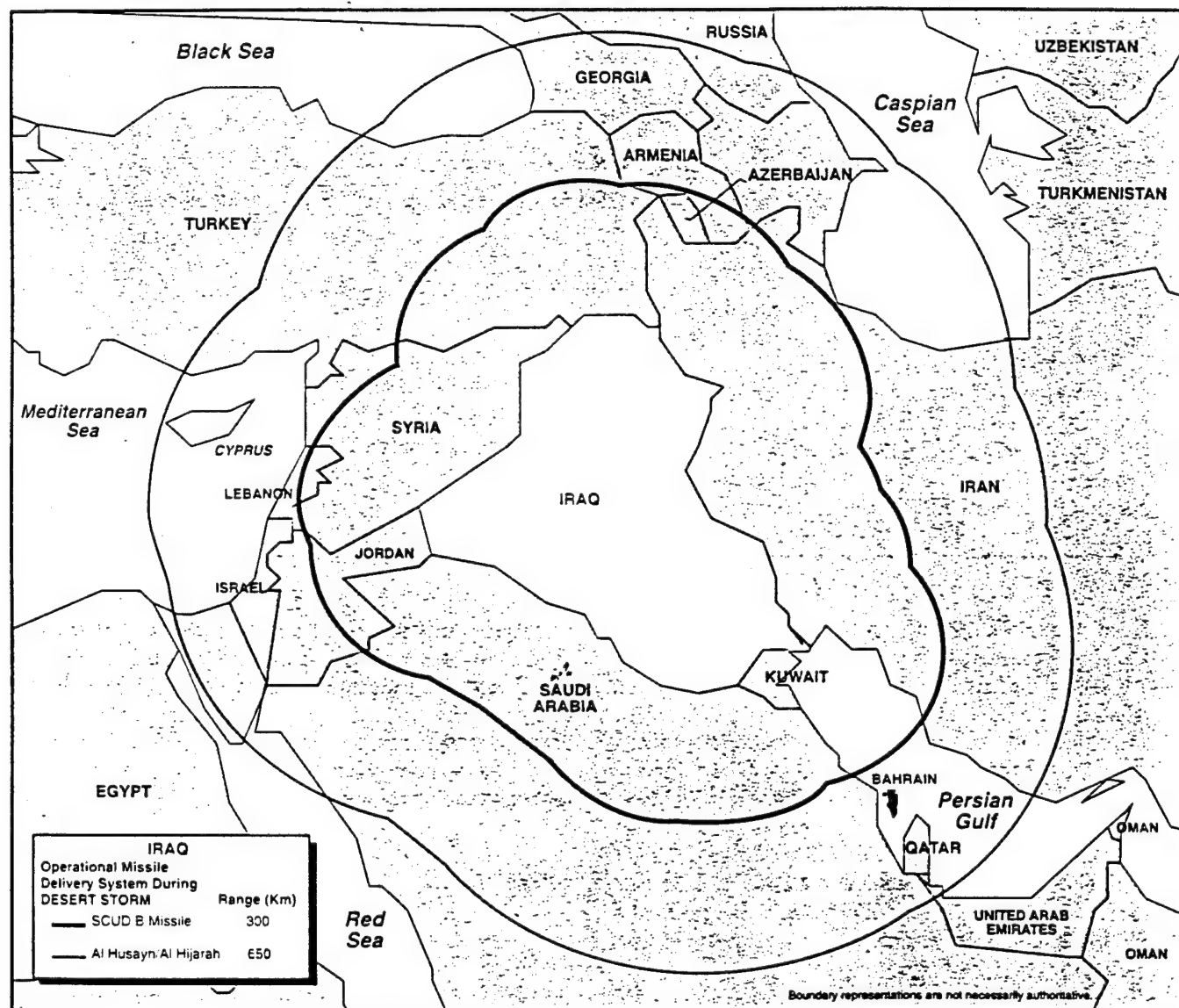


**Missile**

**Iraqi Declarations to the UN**

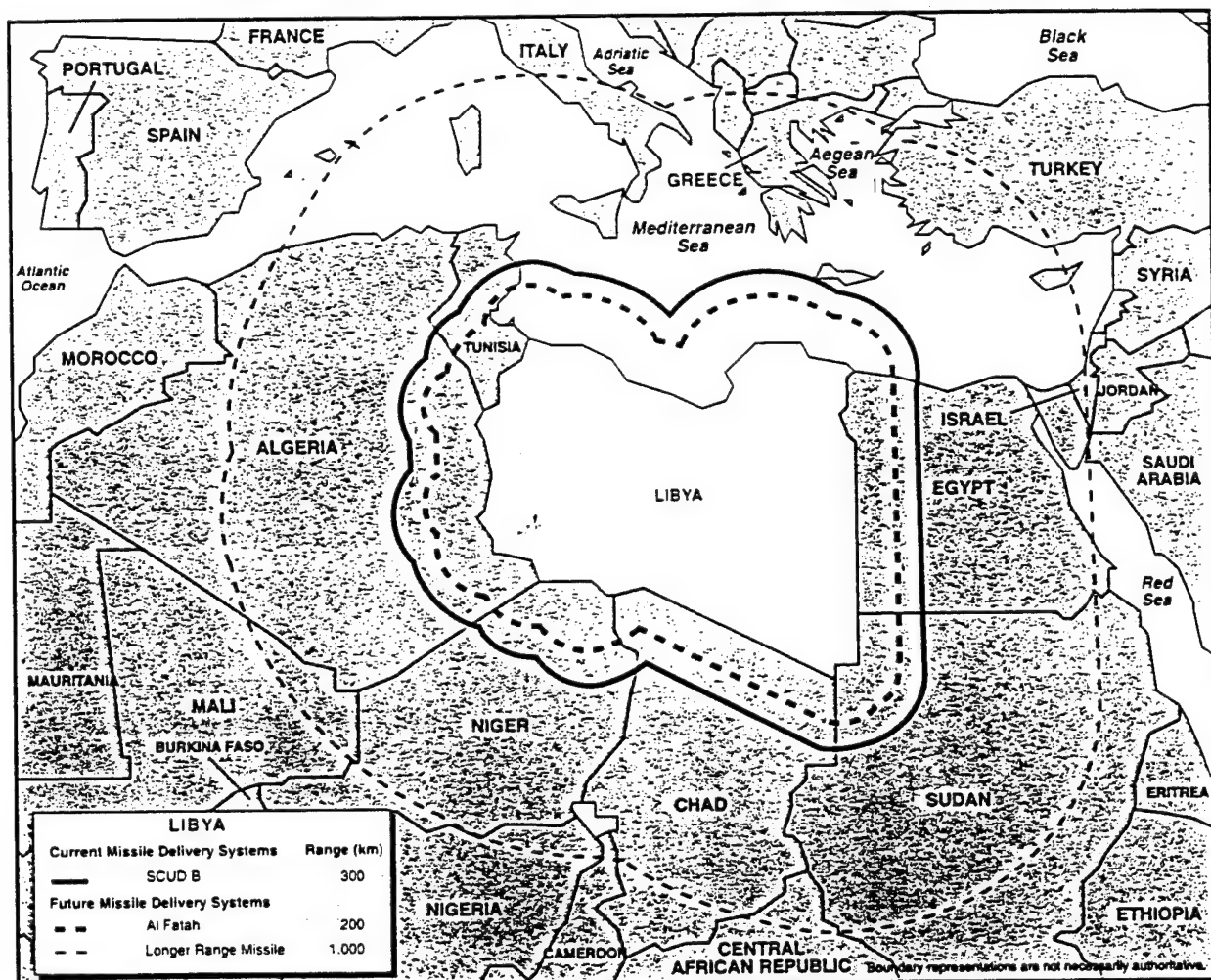
Al Fahd 300	Intended range of 300 km. Based on converting the Russian SA-2 surface-to-air missile (SAM) into a ballistic missile. Abandoned in research and development.
Al Fahd 500	Intended range of 500 km. Displayed at 1989 Baghdad Arms Exposition. A mock-up for a disinformation campaign that never reached the design phase.
Al Abbas	Claimed range of 950 km. Longer in length and carried a lighter payload than the Al Husayn. Abandoned during research and development.
Badr 2000	Intended range 750-1,000 km. Solid-propellant, 2-stage. Based on Argentine Condor missile. Facilities constructed to support missile production. Under research and development.
Tammouz I	Claimed range 2,000 km. Based on SCUD technology with SA-2 SAM sustainer for second stage. In design stage, but not developed further for research and development.
Al Abid	A 3-stage space launch vehicle. First stage consisted of 5 Al Abbas airframes. Test launch of first stage in December 1989.

# OPERATIONAL IRAQI MISSILE FORCE DURING OPERATION DESERT STORM



	Range (kilometers)	Number Launched
SCUD-B	300 km	0
Al Husayn	600-650 km	84
Al Husayn-Short	600-650 km	3
Al Hajarah	600-650 km	1

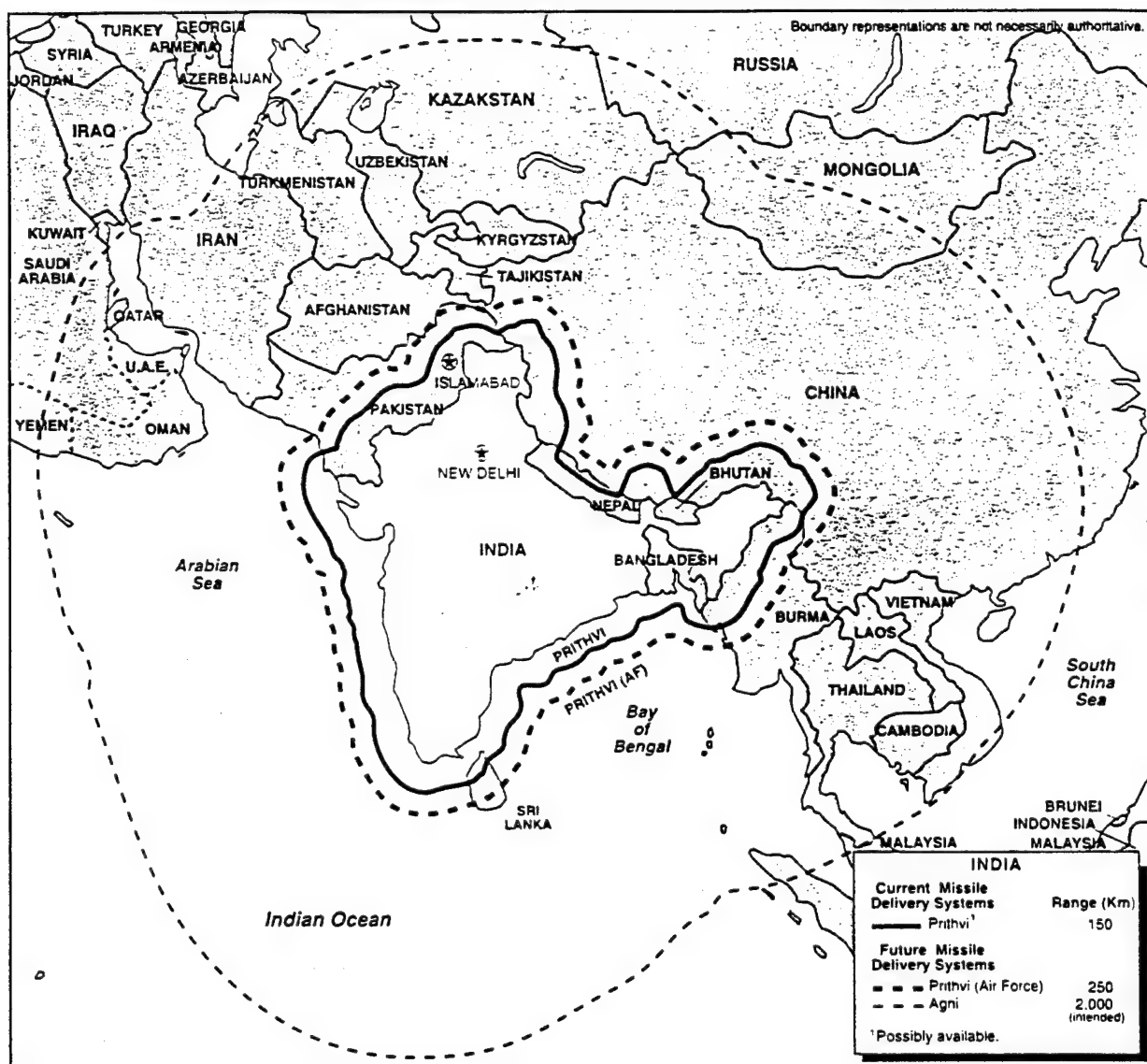
## CURRENT AND FUTURE BALLISTIC MISSILE SYSTEMS



Should Libya acquire a longer range missile, such as the North Korean NODONG, it would have the capability to strike southern Europe and Israel.

Section I  
SOUTH ASIA

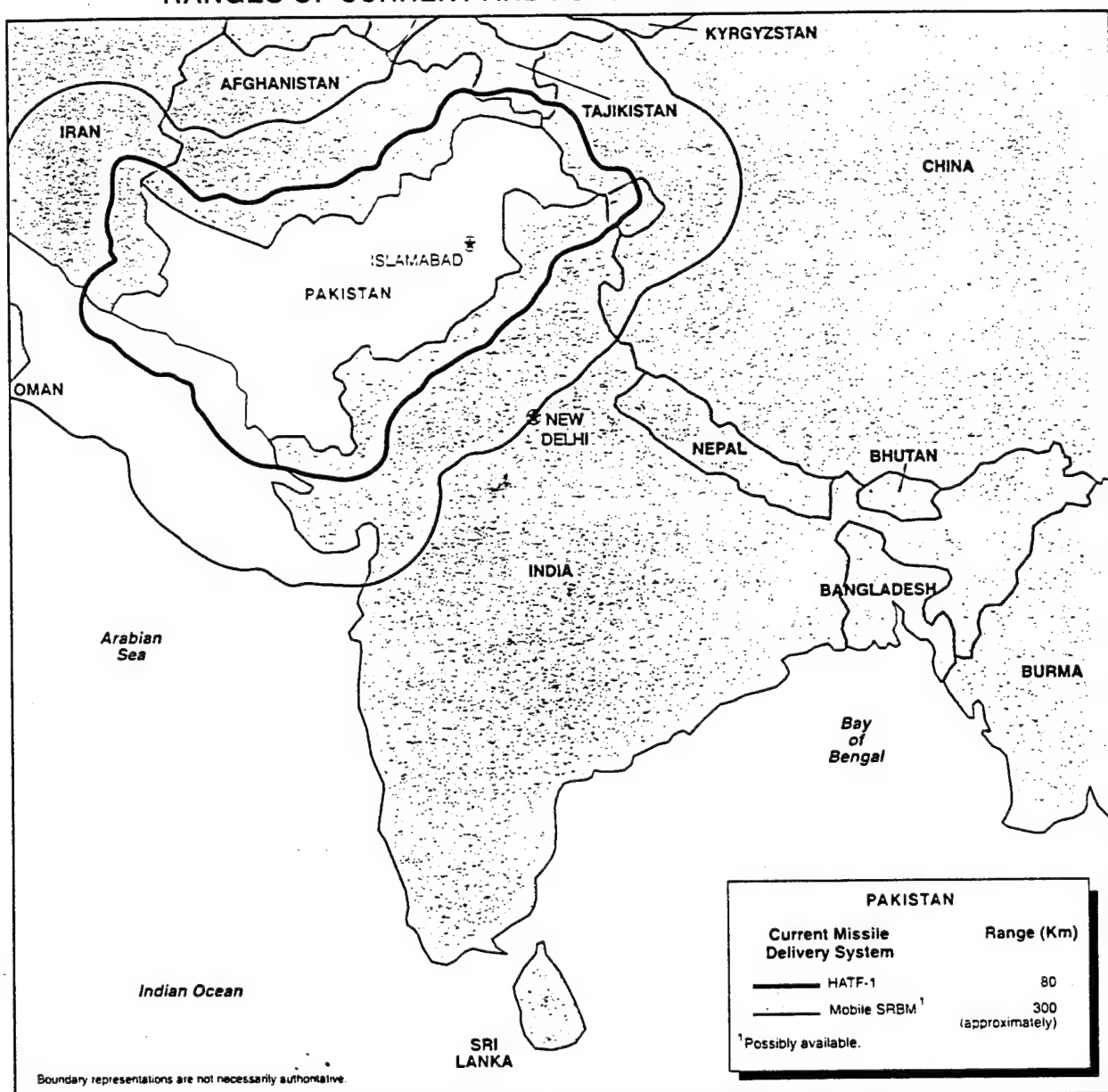
# RANGES OF CURRENT AND FUTURE BALLISTIC MISSILES



India's ballistic missile program grew out of its space launch program of the 1960s. Today, India has one of the more self-sufficient domestic missile production programs in the developing world. New Delhi will continue to be largely unaffected by multilateral control regimes, and denying access to related technology will delay, but not stop, efforts to improve missiles now in development.

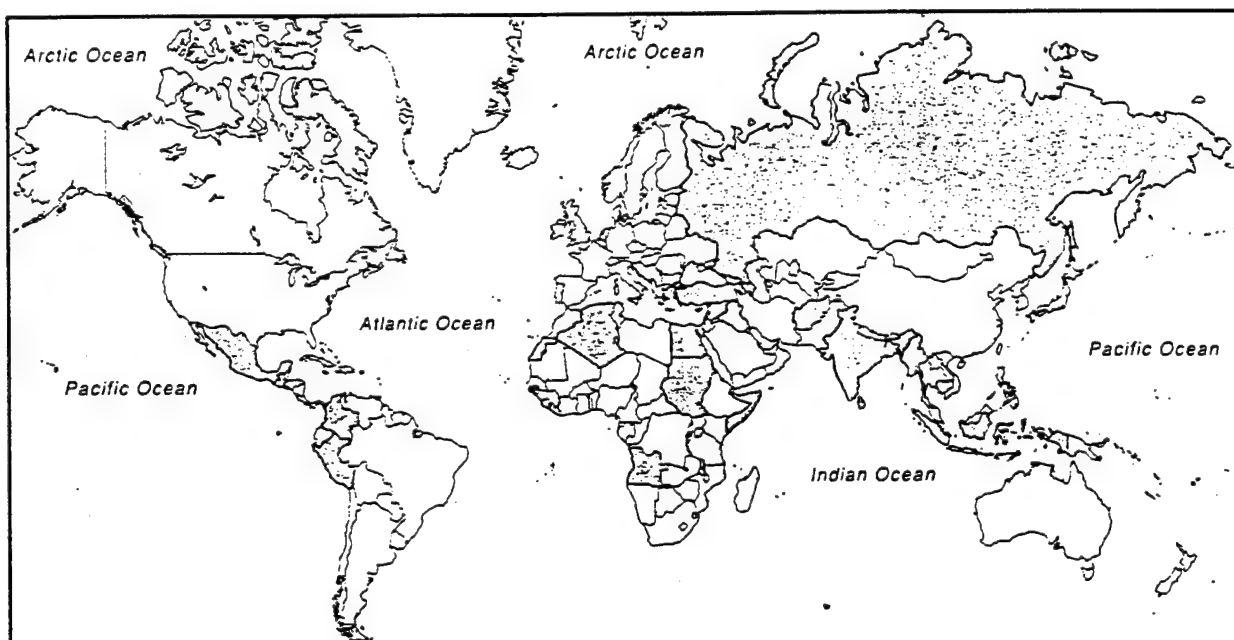
Section I  
SOUTH ASIA

# RANGES OF CURRENT AND FUTURE BALLISTIC MISSILES



Concerned over its ability to deliver weapons using aircraft, Pakistan is establishing a ballistic missile delivery option.

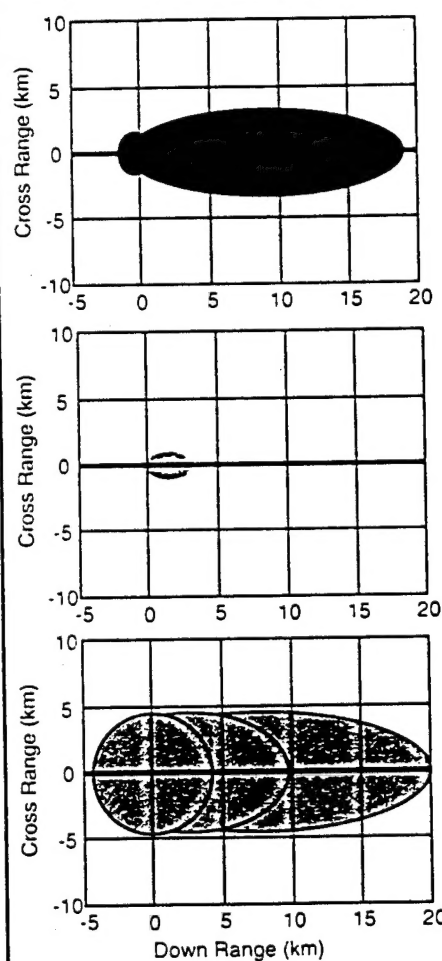




There are numerous ongoing insurgencies, separatist movements, and civil wars worldwide as shown in the shaded areas. The greatest danger would be from the split up of government forces where an opposing group might gain access to NBC weapons or missiles.

Technical Annex  
ACCESSIBLE TECHNOLOGIES

### COMPARISON OF NUCLEAR, BIOLOGICAL, AND CHEMICAL DAMAGE CONTOURS



#### ● Nuclear

The damage contours shown indicate the 450 Rad dose region for the prompt radiation effects and the distribution of fallout from the surface burst of a 20kt nuclear device.

#### ● Chemical

The damage contours shown indicate the chemical dosage effects (ranging from 0.1 mg-min/m<sup>3</sup> to 100 mg-min/m<sup>3</sup>) for a large missile filled with large sub-munitions containing GB (Sarin).

#### ● Biological

The damage contours shown indicate the areas of biological contamination for a missile filled with multiple bomblets containing anthrax agent. The areas correspond to 80, 50, and 35 percent casualties.

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